

WHAT IS CLAIMED IS:

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A' 5
1. An electrode structure on a p-type III group nitride semiconductor layer, comprising first, second and third electrode layers successively stacked on said semiconductor layer,
said first electrode layer including at least one selected from a first metal group of Ti, Hf, Zr, V, Nb, Ta, Cr, W and Sc,
said second electrode layer including at least one selected from a second metal group of Ni, Pd and Co, and
said third electrode layer including Au.
2. The electrode structure according to claim 1, wherein said first electrode layer has a thickness in a range from 1 to 500 nm.
3. The electrode structure according to claim 1, wherein said second electrode layer has a thickness of 5 nm or more.
4. The electrode structure according to claim 1, wherein said third electrode layer has a thickness of 50 nm or more.
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D1
5. The electrode structure according to claim 1, wherein said first electrode layer includes a nitride of a metal included in said first metal group, and also includes a compound of Ga and a metal included in said second metal group.
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6. A method of forming an electrode structure on a p-type III group nitride semiconductor layer, comprising the steps of:
depositing on said semiconductor layer a first electrode layer including at least one selected from a first metal group of Ti, Hf, Zr, V, Nb, Ta, Cr, W and Sc;
depositing on said first electrode layer a second semiconductor layer including at least one selected from a second metal group of Ni, Pd and Co;
and

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depositing on said second electrode layer a third electrode layer including Au.

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7. The method of forming an electrode structure according to claim 6, further comprising the step of heating said electrode structure at a temperature in a range from 300 to 700°C in an N₂ atmosphere, in an Ar atmosphere or in a vacuum after said first to third electrode layers are deposited.

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A² 1

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C² 1

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B³ 1